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Prevalence of Taurodont Molars in a Selected Iranian Adult Population

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ABSTRACT

Introduction: Taurodontism is an anomaly characterized by elongated crowns and consumedly apical location of the bifurcation area. This study aimed to determine the prevalence of taurodontism in molars based on digital panoramic radiographies in eight cities of Iran. **Methods and Materials:** This descriptive cross-sectional study was conducted on 2360 digital panoramic radiographs taken for different treatment purposes. Demographic information of patients was recorded and radiographs were evaluated for presence of taurodont molars. The prevalence rates were calculated and the data were analyzed using SPSS software version 18 via paired *t*-test, *chi* square test and ANOVA. **Results:** A total of 2360 panoramic radiographs (from 51.4% male and 48.6% female patients) were evaluated and the prevalence of taurodontism was reported 22.9% (22.6% in males and 23.3% in females) ($P>0.05$). Its prevalence was 51.67% in the right and 48.33% in the left quadrants ($P>0.05$), 34.1% in the mandible and 65.9% in the maxilla ($P=0.000$) and 79.52% in the second and 20.48% in the first molar ($P=0.000$). The prevalence of hypotaurodontism, mesotaurodontism and hypertaurodontism was 84.13%, 11.07% and 4.8%, respectively. **Conclusion:** The prevalence of taurodont molars was high in Iran and it was more common in the second molars and in the maxilla. Hypotaurodontism had the highest prevalence.

Keywords: Molar; Panoramic; Prevalence; Radiography; Taurodontism

Introduction

Taurodontism is a developmental dental anomaly characterized by bull-like teeth. Taurodont teeth have vertically enlarged pulp chambers and apically displaced root bifurcation [1, 2]. This trait is caused by the failure of the Hertwig's epithelial sheath to invaginate at the proper horizontal level [3]. Taurodont teeth have wide variations in size and shape of pulp chamber and show morphological variations in terms of apically positioned root canal orifices or presence of extra roots [4, 5].

For the diagnosis of a normal or cynodont tooth, a crown.body:root (CB:R) ratio of 1:1 is reasonable, as it has been suggested that the length of the roots of a normal molar is at least equal to the crown-body length [6]. CB:R ratio of slightly less than 1:1 was considered to be within normal limits [7]. According to Shaw [7], taurodontism occurs in varying degrees that may be classified in increasing order of severity as hypotaurodontism, mesotaurodontism and hypertaurodontism. An objective classification based on the CB:R ratio determines that CB:R ratios of the range 1.10-1.29 be classified as the hypotaurodont group, those in the range 1.30-2.00 as the mesotaurodont group, and those more than 2.00 as the hypertaurodont group [8].